National Aeronautics and Space Administration

NASA's Exploration Plans and The Lunar Architecture

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Why Explore the Moon?


Human Civilization


Scientific Knowledge


Exploration Preparation


Global Partnerships

Economic Expansion


Public Engagement

Leveraging Partnerships and Public Engagement

Commercial Partnerships

- Engaging US Chamber of Commerce and Industry for innovation, efficiency, and expansion
- Cooperating with the private sector to promote expansion of economic activity on the moon

Science

- Coordinating with science community to identify science objectives and scenarios
- Integrating science and exploration needs for lunar data

Public Engagement

- Investigating opportunities for the public to access high bandwidth video broadcast of lunar exploration operations and highly interactive forms of participatory exploration

International Partnerships

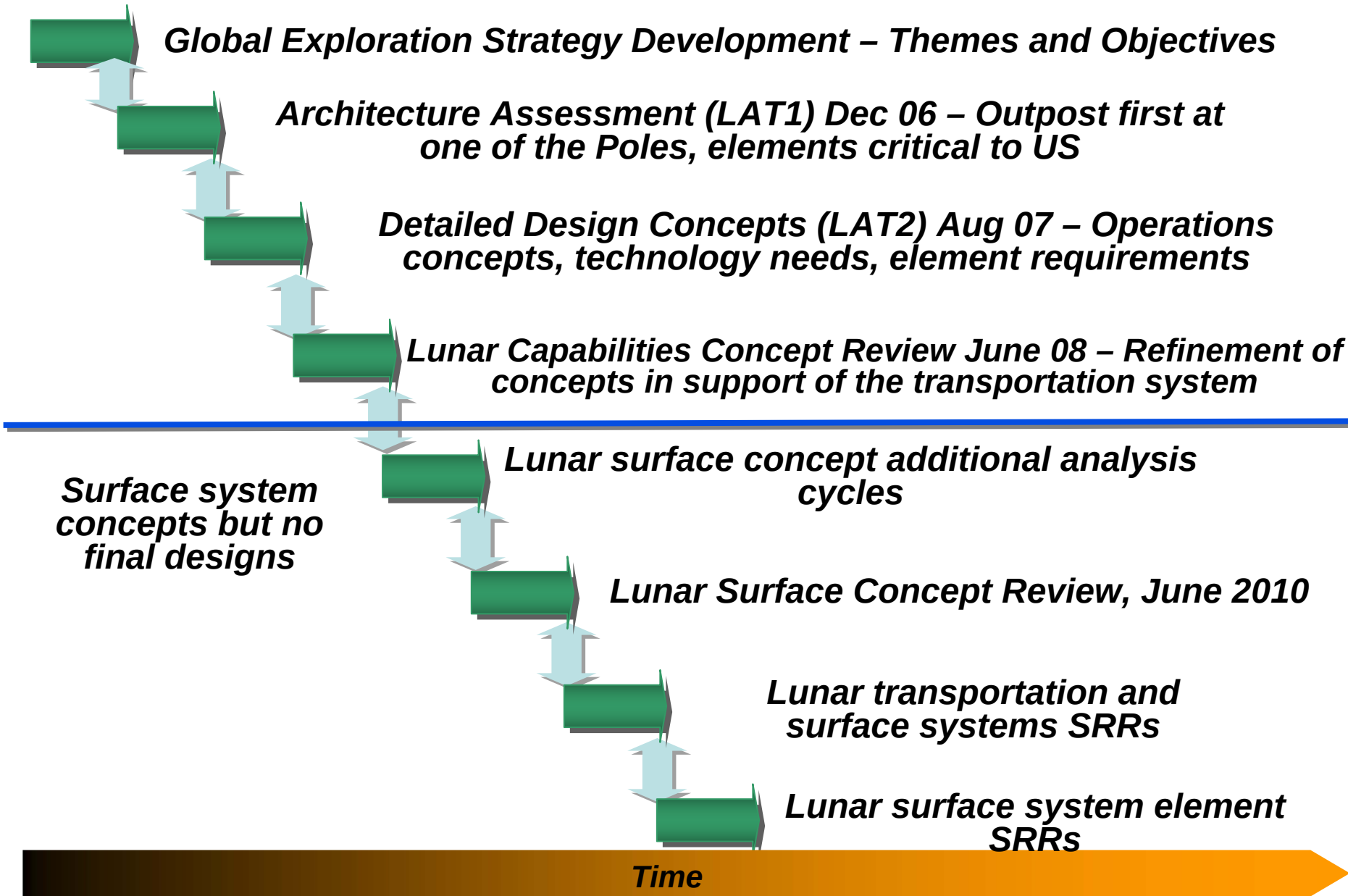
- Establishing a global framework for coordination of lunar activities (e.g. global interface standards to enable exploration system interoperability

Inter-Agency Partnerships

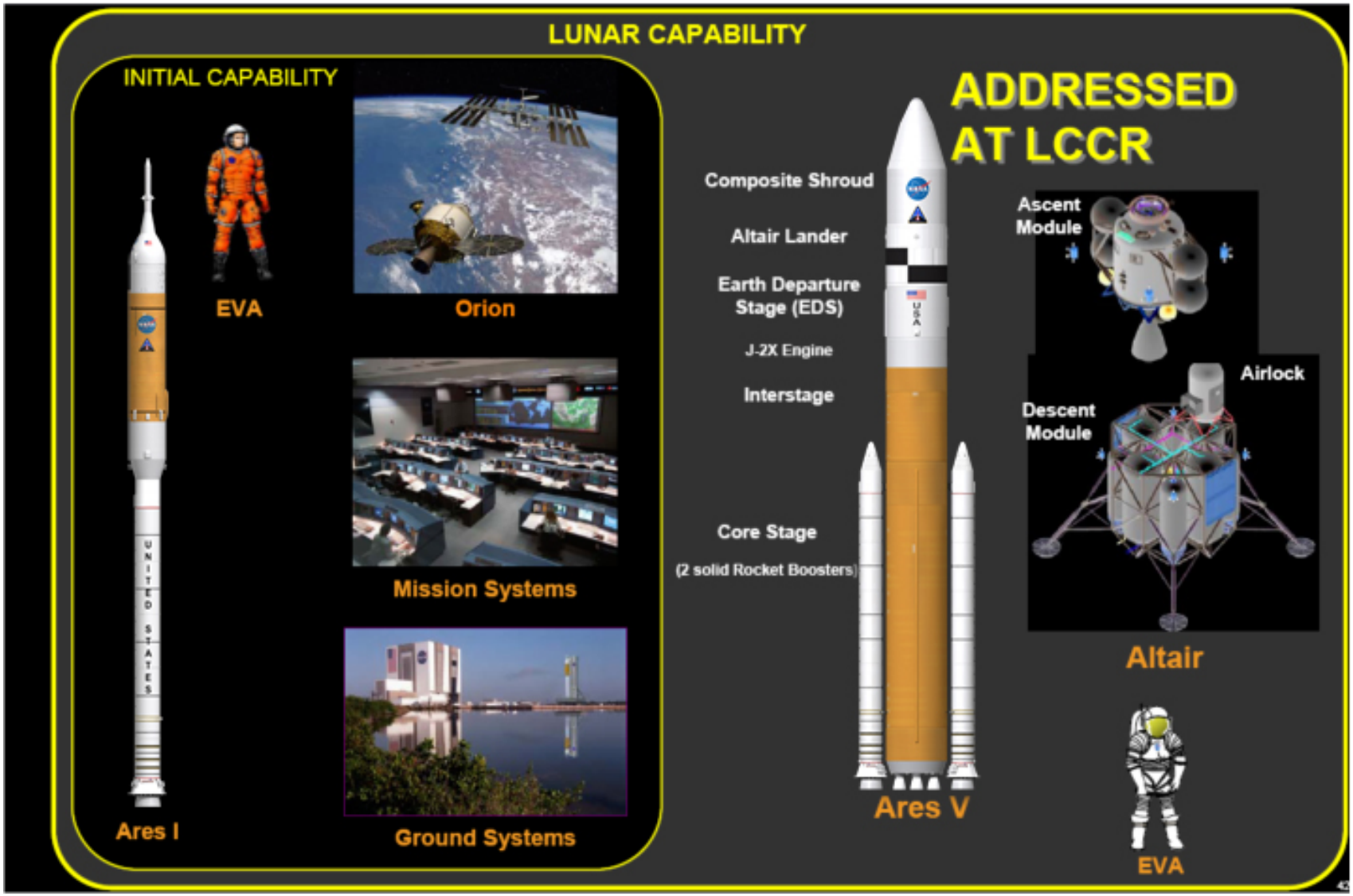
- Coordinating activities with other U.S. government departments and agencies

Architecture Development Driven By A Strategy

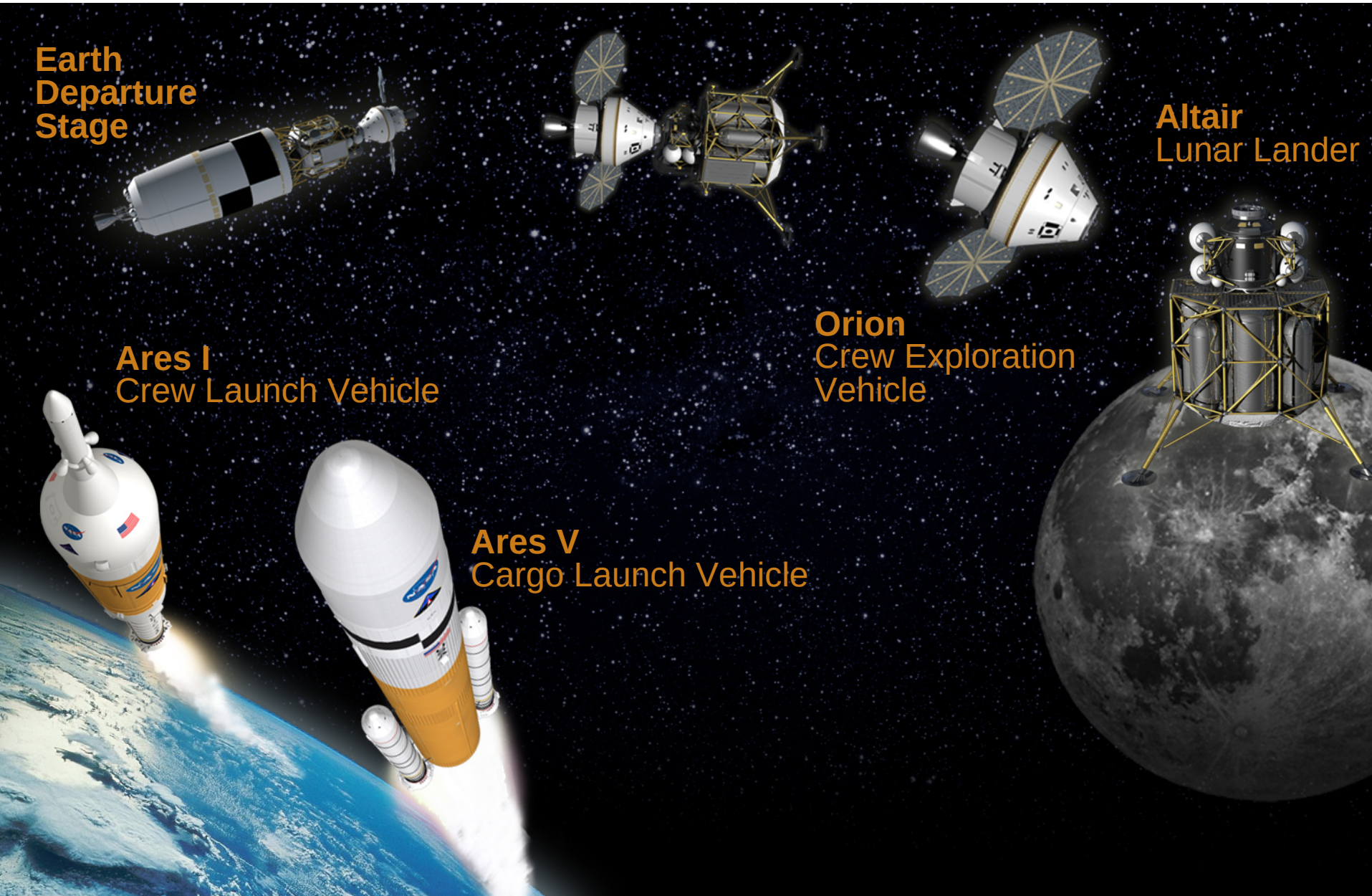
Where We Have Been and Next Steps



Constellation Program

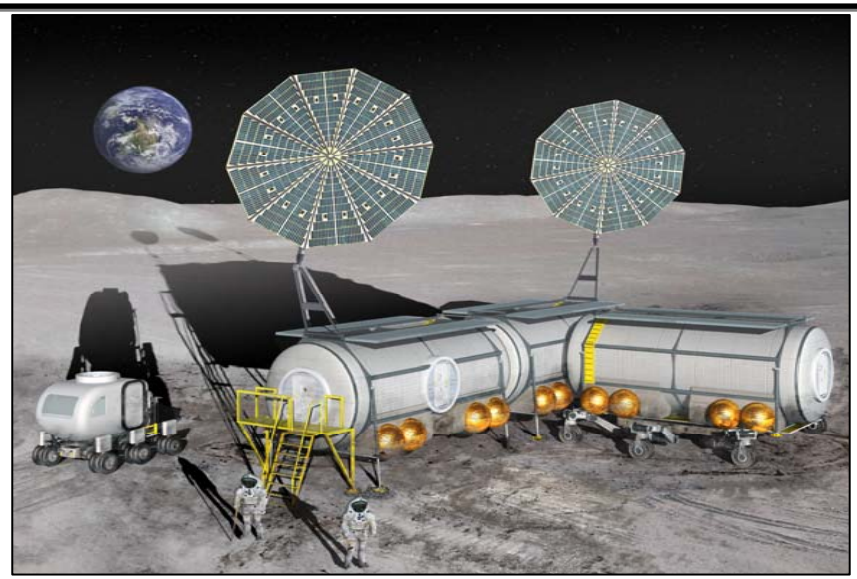


Constellation Program Fleet of Vehicles



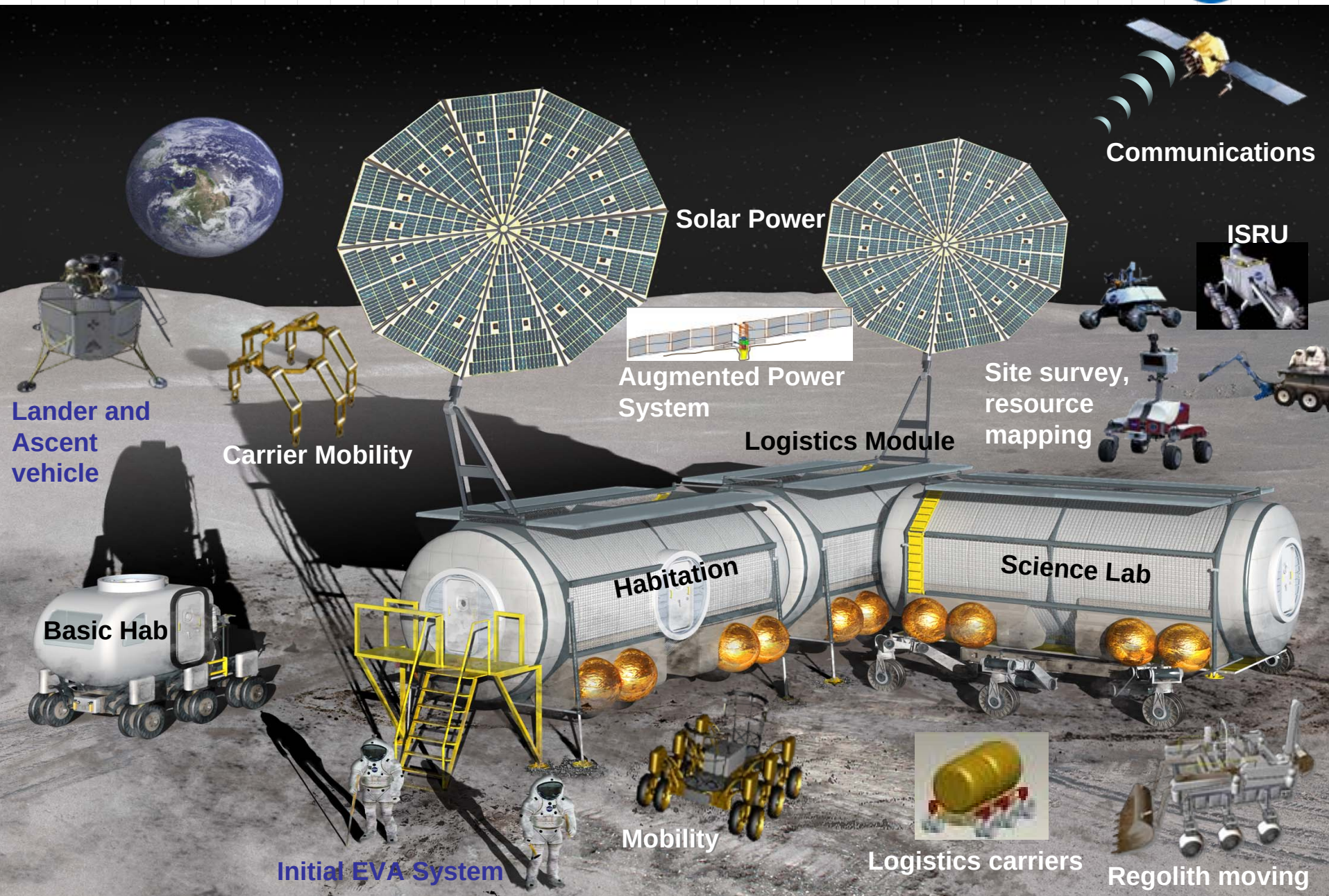
Lunar Architecture Framework — A Notional Point of Departure

- Human lunar missions will be used to build an outpost at a polar site
- The ability to fly human sorties and cargo missions with the human lander will be preserved
- Initial power architecture will be solar with the potential augmentation of nuclear power at a later time



- Robotic missions will be used to:
  - Characterize critical environmental parameters and lunar resources
  - Test technical capabilities as needed (Build-up approach)
- The ability to fly robotic missions from the outpost or from Earth will be a possible augmentation

Notional Elements of an Outpost



Summary

- **International, Commercial, Science, and Other Government Agency Partnerships are Vital to Exploration Success**
- **NASA is continuing to perform integrated architecture assessments that incorporate and influence element designs (e.g. Orion, Altair, Ares, Lunar Surface Systems) to meet strategic and policy objectives, as well as mission-level performance, cost and risk goals**
- **NASA continues to seek innovative concepts and designs from all sources to improve the evolving architecture**